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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/042,901	01/08/2002	John Stauffer	004860.P2753	5806

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EXAMINER

QUILLEN, ALLEN E

ART UNIT	PAPER NUMBER
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2676

DATE MAILED: 01/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/042,901

Applicant(s)

STAUFFER ET AL.

Examiner

Allen E. Quillen

Art Unit

2676

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-40 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5. 6) ☐ Other: _____

DETAILED ACTION

Double Patenting

1. Claims 1-40 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 10-14, 21 of copending Application No. 10/042,882, and claims 1, 7 and 9, of copending Application No. 10/0043,018. Although the conflicting claims are not identical, they are not patentably distinct from each other because a token command and tokenized addressing are inherently equivalent functionality. Furthermore, for the system to function as described in the specification it is obvious that the client must receive the address for the graphics resource, therefore it must be returned (Claim 1, third and fourth clauses). Claim 7 is equivalent to claims 7 and 9 of Application 10/043,018. Otherwise, the claims, as noted above, are identical.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground

Art Unit: 2676

provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-40 are rejected under 35 U.S.C. 102(e) as being anticipated by Wilt et al, U.S. Patent Application Publication 2003/0140179, hereinafter referred to as Wilt (Nene, Beda).

4. Regarding claim 1, representative of claims 9, 17, 25, 33, Wilt (Nene, Beda) disclose a computerized method, machine readable code, a processing system, a graphics system, and an apparatus for virtualizing graphics resources comprising (Figures 3A-E, 6-7; Page 3; Pages 13-14, Paragraph 142; 145): receiving, by a graphics kernel (*DIRECTX API*, Page 1, Paragraph 7; *DIRECT3D*, Page 13, Paragraph 136), an allocation request for a graphics resource from a graphics client (*OpenGL*, Page 13, Paragraph 139); allocating, by the graphics kernel, the graphics resource to the graphics client; returning, by the graphics kernel, an address for the graphics resource to the graphics client; receiving, by the graphics kernel, a command from the

Art Unit: 2676

graphics client specifying the address; and managing, by the graphics kernel, the graphics resource (Page 17, Paragraphs 165-171).

5. Regarding claim 2, representative of claims 3-6, 10-14, 18-22, 26-30, 34-38, Wilt (Nene, Beda) disclose the computerized method of claim 1, wherein managing the graphics resource comprises: determining if the graphics resource is available (*free the resources*, Page 15, Paragraph 151; Figure 2, elements 203-204); and paging current data associated with the graphics resource to a backing store if the graphics resource is not available (*paged out*, Page 13, Paragraph 142-143)

[further claim 3] using paging criteria (*scheduler, arbitrating, paged out*, see above);

[further claims 4] paging criteria is selected (Page 14, Paragraph 146-147) from the group consisting of a type of graphics resource (*free the resources needed*, a priority (*event, context switch*, Page 14, Paragraph 151-152), and a paging algorithm (*a surface has been pulled back, allocate new video memory*, Page 14, Paragraph 143);

[further claim 5] based on usage of the graphics resource (*non-temporal writes into AGP memory*, Page 14, Paragraph 144);

[further claim 6] detecting a conflict if the graphics resource represented by the token has been reused and resolving the conflict (see above; *a surface has been pulled back, allocate new video memory*, Page 14, Paragraph 143);

6. Regarding claim 7, representative of claims 15, 23, 31, 39, Wilt (Nene, Beda) disclose the computerized method of claim 6, wherein resolving the conflict comprises: inserting a reference

Art Unit: 2676

to a graphics hardware semaphore before a command; paging the current data associated with the graphics resource to the backing store (Page 11, Paragraph 122); paging data for the graphics client from the backing store into the graphics resource (Paragraph 118); and clearing the graphics hardware semaphore (see above; Page 16, Paragraph 160).

7. Regarding claim 8, representative of claims 16, 24, 32, 40, Wilt (Nene, Beda) disclose the computerized method of claim 1, recording, by the graphics kernel, information about the graphics resource in an virtualization map, for use in allocating and managing graphics resources (*tracking the resources, allocate, monitor memory usage, dynamically linked, scheduler*, Figure 6, element 404, Pages 13-14, Paragraphs 142-147).

Prior Art Not Used

The Applicant is provided the following relevant art:

U.S. Patent Application Publication 2003/0131147, Wilt et al, managing drivers in an heterogeneous API environment

U.S. Patent Application Publication 2002/0101427, Nguyen et al, host-client-kernel space multiprocessor texture manager system.

U.S. Patent Application Publication 2002/0032850, James R. Kauffman, multiprocessor that partitions resources

U.S. Patent Application Publication 2002/0052914, Zalewski et al, multiprocessor with flexible resource sharing

U.S. Patent 6,633, 564, Steer, et al, memory offset and jump command processing

U.S. Patent 6,397,263, Hancock et al, efficient parsing of command input strings

Art Unit: 2676

U.S. Patent 6,005,851, Craddock et al, allocating graphics data types based on priority

U.S. Patent 6,408,386, Hammond et al, adaptive event handling paging scheme

U.S. Patent 5,832,289, Shaw et al, packet processor in multiprocessor distributed
graphics computing paging using most frequently or most recently used algorithms

Owens, John D. et al, Polygon Rendering on a Stream Architecture, SIGGRAPH /
EUROGRAPHICS Workshop on Graphics Hardware, ACM Press, NY, NY, August, 2000, pp.
23-32.

Conclusion

Any inquiry concerning this communication or earlier communications from the
examiner should be directed to Allen E. Quillen whose telephone number is (703) 605-4584.

The examiner can normally be reached on Tuesday – Friday, 8:30am – noon and 1:00 - 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's
supervisor, Matthew C. Bella, can be reached on (703) 308-6829.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

Or FAX'd to:

(703) 872-9314 (for Technology Center 2600 only)

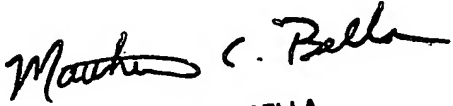
Hand delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Sixth
Floor (Receptionist), Arlington, Virginia

Art Unit: 2676

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number (703) 305-9600 or (703) 305-3800.

Allen E. Quillen
Patent Examiner
Art Unit 2676

January 12, 2004


MATTHEW C. BELLA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800